

REMARKS

Applicant submits this Amendment and Response in reply to the Office Action dated March 31, 2010. Claims 1, 3 – 11, 28 and 29 are pending in the application with Claim 1 being in independent form. By the present amendment, Claims 1, 3, 4 and 6 – 8 are amended, Claim 27 is canceled, and Claims 28 and 29 are newly added. No new subject matter is introduced into the disclosure by way of the present amendment.

Also, Applicant thanks the Examiner for indicating that Claim 5 contains patentably distinct subject matter and thus would be allowable if rewritten in independent form including all the limitations recited in the base claim and any intervening claims.

Regarding the rejection of Claim 27 under 35 U.S.C. § 112, second paragraph and under 35 U.S.C. § 103(a) over U.S. Publication No. 2004/0166809 (hereinafter, “Dickey”) in view of U.S. Patent No. 5,390,216 issued to Bilitza et al. and further in view of U.S. Patent No. 6,349,207 issued to Monot et al., Claim 27 has been canceled by way of the present amendment, thus the rejections with respect to this claim are rendered moot.

I. Rejection of Claims 1, 3, 4 and 6 - 11 Under 35 U.S.C. § 103(a)

Claims 1, 3, 4 and 6 – 11 are rejected under 35 U.S.C. § 103(a) as allegedly obvious over U.S. Publication No. 2004/0166809 (hereinafter, “Dickey”) in view of U.S. Patent No. 5,390,216 issued to Bilitza et al.

Applicant’s invention according to amended Claim 1 receives and processes a single received signal by selecting a plurality of portions of it to derive a set of amplitude values which are then used to obtain both signal and interference power levels. The portions of the signal used to derive the amplitude values are identified from a known structure in a broadcast

channel of the wanted signal. These power levels are determined from the derived set of amplitude values.

In Dickey, as described in paragraph 4, the problem addressed is the separation of many wanted signals coming from different base stations. The problem arises where base stations are transmitting components on the same frequency, or adjacent channels in close proximity, and occurs only in particular areas of the coverage region. As described in paragraph 18, the Dickey invention is based on an area measurement approach and relies on relative time-of-arrival measurements to separate wanted signal components from the different base stations.

Embodiments of Applicant's invention are in practice dealing with a rather different situation. In Applicant's invention, as recited in the claims, a received signal contains a wanted signal plus interference. From this single received signal, both wanted signal power level and interference power levels are determined. There are no other signals involved and certainly not a whole series of signals from different geographic positions, as in Dickey.

Dickey relies on the series of signals from different geographic positions to be time-synchronized. Otherwise the time of arrival offers no information. As mentioned on page 8, lines 23-27 of the specification, Applicant's invention relies on base stations not being time synchronized so that the step a) of selecting "a plurality of portions having a first known structure in said received signal, said plurality of portions being identified using a further known structure within the broadcast control channel" can be used to find the wanted signal because the broadcast control channel of the wanted signal can uniquely identify it.

Instead, Dickey distinguishes between base station signals by using area measurement and the time of arrival of the signals. In Dickey, as described in paragraph 19, the processing algorithm:

“...uses a histogram of relative signal delays for the whole area of measurement that comprises multiple cells to find the timing relations that are characteristic of the transmitting base stations in the area and are invariant for the duration of the test.”

There is no area of measurement in embodiments of Applicant's invention which operates using a series of measurements relating to just one received signal.

A factor which is completely missing in Dickey is step c) of Applicant's claim 1: the determination of both signal power level and interference power level of a single received signal, on its own, from a derived set of amplitude values identified using a known structure in a broadcast control channel in the received signal.

For completeness, taking the paragraphs of Dickey specifically referred to in the present Office Action, they are as follows.

In Dickey, as described in paragraphs 28 to 31, a drive test of a whole area under review is performed and signal samples are collected and correlated with known signal patterns on every frequency channel in a TDMA/FDMA system. As described in paragraph 28, these correlated signals, samples are then de-correlated to give signal components corresponding to “each of the interferers present in the signal mix” and a time of arrival is measured in relation to each of them. These times of arrival, or time delays, can be used to identify individual base stations relative to the interferers in the signal mix.

As described in paragraph 29, the absolute correlated power of each detected signal component is determined, but this necessarily includes both signal and interference. These

absolute power measurements are then stored with the relative time of arrival for every detected signal component for every measurement point in the area under review.

As described in paragraph 30, these power measurements for respective detected signal components are pre-processed by merging selected correlation peaks and averaging the power measurements.

As described in paragraph 31, for every measurement point in the area under review, sets of correlation peaks are selected, based on picking the ones relating to the most powerful components of the detected signal. These are picked either by setting a threshold power level or by selecting the top ranking in terms of power.

Paragraphs 28 to 31 describe a process in which multiple measurements of many different received signals are analyzed in terms of time of arrival in order to distinguish signals from different base stations. This is quite different from Applicant's invention as now specified in the amended claims.

Bilitza et al. in col. 5, lines 55-68, is describing a known technique for frame determination and synchronization. This is being used for providing the initial connection between a mobile radio telephone and a fixed station. Although Bilitza et al. relates to the use of distinctive structures in communications signals, it cannot change the general idea behind Dickey which is to create a histogram embodying a geographical map of multiple base station signals being received at different points, distinguished according to base station by time of arrival, not signal structure.

Therefore, it is believed that Claims 1, 3, 4 and 6 - 11 are allowable over the cited prior art references. Accordingly, Applicant respectfully requests withdrawal of the rejection with respect to Claims 1, 3, 4 and 6 – 11 under 35 U.S.C. § 103(a) over Dickey in view of Bilitza et al.

Additionally, newly added Claims 28 and 29 depend from independent Claim 1 and thus include all the features and limitations recited in that independent claim. Therefore, Claims 28 and 29 are believed to be allowable over the cited prior art references for at least the reasons presented above.

CONCLUSIONS

In view of the foregoing amendments and remarks, it is respectfully submitted that all claims presently pending in the application, namely, Claims 1, 3 – 11 and 28 – 29 are believed to be in condition for allowance and patentably distinguishable over the art of record.

If the Examiner should have any questions concerning this communication or feels that an interview would be helpful, the Examiner is requested to call Applicant's undersigned attorney at the number indicated below.

Respectfully submitted,



Katherine R. Vieyra
Registration No: 47,155

Scully, Scott, Murphy & Presser, P.C.
400 Garden City Plaza, Suite 300
Garden City, New York 11530
516-742-4343
KRV/DAT:dk